1. Develop a C program for implementing random access file for processing the employee details.

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

struct Employee {

int id;

char name[30];

float salary;

};

void addEmployee(FILE \*fp) {

struct Employee emp;

printf("Enter ID, Name, Salary: ");

scanf("%d %s %f", &emp.id, emp.name, &emp.salary);

fseek(fp, (emp.id - 1) \* sizeof(emp), SEEK\_SET);

fwrite(&emp, sizeof(emp), 1, fp);

printf("Record added.\n");

}

void displayEmployees(FILE \*fp) {

struct Employee emp;

rewind(fp);

printf("\n-- Employee Records --\n");

while (fread(&emp, sizeof(emp), 1, fp)) {

if (emp.id != 0) // Avoid empty slots

printf("ID: %d, Name: %s, Salary: %.2f\n", emp.id, emp.name, emp.salary);

}

}

void searchEmployee(FILE \*fp) {

int id;

struct Employee emp;

printf("Enter ID to search: ");

scanf("%d", &id);

fseek(fp, (id - 1) \* sizeof(emp), SEEK\_SET);

fread(&emp, sizeof(emp), 1, fp);

if (emp.id == id)

printf("Found - ID: %d, Name: %s, Salary: %.2f\n", emp.id, emp.name, emp.salary);

else

printf("Employee not found.\n");

}

void updateSalary(FILE \*fp) {

int id;

float newSal;

struct Employee emp;

printf("Enter ID to update: ");

scanf("%d", &id);

fseek(fp, (id - 1) \* sizeof(emp), SEEK\_SET);

fread(&emp, sizeof(emp), 1, fp);

if (emp.id == id) {

printf("Old Salary: %.2f\n", emp.salary);

printf("Enter new salary: ");

scanf("%f", &newSal);

emp.salary = newSal;

fseek(fp, (id - 1) \* sizeof(emp), SEEK\_SET);

fwrite(&emp, sizeof(emp), 1, fp);

printf("Salary updated.\n");

} else {

printf("Employee not found.\n");

}

}

int main() {

FILE \*fp = fopen("employee.dat", "rb+");

if (fp == NULL) {

fp = fopen("employee.dat", "wb+");

if (fp == NULL) {

printf("File error.\n");

return 1;

}

}

int choice;

do {

printf("\n--- Employee Management ---\n");

printf("1. Add Employee\n2. Display Employees\n3. Search by ID\n4. Update Salary\n5. Exit\n");

printf("Enter choice: ");

scanf("%d", &choice);

switch (choice) {

case 1: addEmployee(fp); break;

case 2: displayEmployees(fp); break;

case 3: searchEmployee(fp); break;

case 4: updateSalary(fp); break;

case 5: printf("Exiting...\n"); break;

default: printf("Invalid choice.\n");

}

} while (choice != 5);

fclose(fp);

return 0;

}